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EXAMINER	
BENSON, WALTER	
ART UNIT	**PAPER NUMBER**
2858	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/543,115	KRAUS, RANDOLF	
	Examiner	Art Unit	
	Walter Benson	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 5/22/2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 7/22/05 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 10/07/05,& 7/22/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11 are presented for examination.

Drawings

2. The drawings are objected to because U_3 described in paragraphs [019] and [022] is not shown in the Figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because line 3, "comprises" should read – includes--. Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

i. page 2, paragraph. [005], line 2 refers to "features of claim 1" which should either be written out in full or canceled.

Appropriate correction is required.

Claim Objections

5. Claim 1 is objected to because of the following informalities:

i. dash - in front of each element.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Herzog (US Patent No. 4,743,837 and Herzog hereinafter).

8. As to claim 1, Herzog discloses a circuit for a capacitive proximity switch for the determination of an operating state and having:

a capacitive sensor element, whose capacitance changes as a function of the operating state (col. 2, lines 44-50)

a central capacitor (col. 2, lines 50-53);

a first controllable connecting means which, as a function of a triggering signal, supplies a charging voltage to the capacitive sensor element (Fig. 1; col. 3, lines 14-17);

a second controllable connecting means, which, as a function of the triggering signal, connects the capacitive sensor element to the central capacitor for a transfer of charge from the capacitive sensor element to the central capacitor (Fig. 1; col. 3, lines 21-24);

where the charging voltage is an AC voltage and the AC voltage is supplied to the connecting means in such a way that, in alternating manner, the first connecting means or the second connecting means is conductive (Figs 3 and 4; col. 5, lines 58-60 and col. 6, lines 1-2).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herzog in view of Philipp (US Patent No. 6,466,036 and Philipp hereinafter).

Although the system disclosed by Herzog shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the charging voltage is generated with the aid of a DC voltage source and a square-wave voltage source with a common reference potential, a clamping diode being looped in the conducting direction between a charging voltage node and said DC voltage source and a capacitor and a resistor are looped in series between said charging voltage node and the square-wave voltage source [claim 2];

where the first connecting means is a diode [claim 3];

where an anode of the diode is connected to the charging voltage node and that a cathode of the diode is connected to a filter resistor, which is coupled to the capacitive sensor element [claim 4];

where a switch is connected in parallel to the central capacitor [claim 7];

where the sensor has several capacitive sensor elements, where with each of which is associated a first and a second connecting means, and only has one single central capacitor, which is connected in a conducting direction across in each case one decoupling diode to the particular second connecting means, the anode of the decoupling diode being connected by a selection diode in the conducting direction with a selection signal [claim 8];

where the capacitive sensor element is constructed for application to an underside of a surface or a cover having dielectric characteristics [claim 9];

where the capacitive sensor element has a smooth, planar surface for engagement purposes [claim 10];

where the capacitive sensor element is a voluminous, elastic, elongated body of electrically conductive material [claim 11].

Nonetheless, these features are well known ion the art and would have been an obvious modification of the system disclosed by Herzog, as evidenced by Philipp.

Philipp discloses a charge transfer capacitance measurement circuit having:

where the charging voltage is generated with the aid of a DC voltage source and a square-wave voltage source with a common reference potential, a clamping diode being looped in the conducting direction between a charging voltage node and said DC voltage source and a capacitor and a resistor are looped in series between said charging voltage node and the square-wave voltage source [claim 2] (col. 4, lines 30-46);

where the first connecting means is a diode [claim 3] (37, Fig. 19);

where an anode of the diode is connected to the charging voltage node and that a cathode of the diode is connected to a filter resistor, which is coupled to the capacitive sensor element [claim 4] (col. 12, lines 32-37);

where a switch is connected in parallel to the central capacitor [claim 7] (S_3, Cs, Fig. 1);

where the sensor has several capacitive sensor elements, where with each of which is associated a first and a second connecting means, and only has one single central capacitor, which is connected in a conducting direction across in each case one decoupling diode to the

particular second connecting means, the anode of the decoupling diode being connected by a selection diode in the conducting direction with a selection signal [claim 8] (Fig. 14; col. 13, lines 41-47);

where the capacitive sensor element is constructed for application to an underside of a surface or a cover having dielectric characteristics [claim 9] (col. 13, lines 56-58);

where the capacitive sensor element has a smooth, planar surface for engagement purposes [claim 10] (col. 13, lines 64-66);

where the capacitive sensor element is a voluminous, elastic, elongated body of electrically conductive material [claim 11] (col. 4, lines 25-29).

Given the teaching of Philipp, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Herzog by employing the well known or conventional features of proximity sensing technology, such as disclosed by Philipp in order to provide an enhanced proximity sensing means in the Herzog device.

10. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herzog in view of Gremm (US Patent No. 6,518, 820 and Gremm hereinafter).

Although the system disclosed by Herzog shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the second connecting means is a bipolar transistor [claim 5];

where the transistor is connected to the charging voltage node, that an emitter of the transistor is connected to a filter resistor, which is coupled to the capacitive sensor element and

that a collector of the transistor is connected to the central capacitor whose other terminal is connected to a reference voltage [claim 6].

Nonetheless, these features are well known ion the art and would have been an obvious modification of the system disclosed by Herzog, as evidenced by Gremm.

Gremm discloses a capacitance measurement circuit for a sensor element of a contact switch having:

where the second connecting means is a bipolar transistor [claim 5] (col. 2, lines 51-54);

where the transistor is connected to the charging voltage node, that an emitter of the transistor is connected to a filter resistor, which is coupled to the capacitive sensor element and that a collector of the transistor is connected to the central capacitor whose other terminal is connected to a reference voltage [claim 6] (Fig. 14, col. 13, lines 41-43).

Given the teaching of Gremm, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Herzog by employing the well known or conventional features of capacitance sensing technology, such as disclosed by Gremm in order to provide an enhanced capacitance sensing means in the Herzog device to obtain a large signal swing of the circuit.

Prior Art Made of Record

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Schulz et al. (US Patent No. 7,205,777) discloses a capacitive proximity switch.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter Benson whose telephone number is (571) 272-2227. The examiner can normally be reached on Mon to Fri 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Walter Benson
Primary Examiner

June 21, 2007